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(54) **THREE-DIMENSIONAL IMAGE PROCESSING SYSTEM HAVING DYNAMICALLY CHANGING CHARACTER POLYGON NUMBER**

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**Related U.S. Application Data**

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(58) Field of Search ............................. 463/30, 31, 32, 463/33, 34, 35, 36; 345/418, 428

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(57) **ABSTRACT**

A video game system includes a game cartridge which is pluggably attached to a main console having a main processor, a coprocessor, and player controllers. A multi-functional peripheral processing subsystem external to the game microprocessor and coprocessor is described which executes commands for handling player controller input/output to thereby lessen the processing burden on the graphics processing subsystem. The video game system and methodology features a unique player controller. A player controlled character may be controlled in a multitude of different ways utilizing the combination of the joystick and/or cross-switch and/or control keys. The controlled character's pace may be varied between walking by slight controller joystick movement or running through a greater angular displacement of the joystick, while at the same time controlling the direction of the character's movement over 360 degrees in the three-dimensional world. the number of polygons utilized to display a player-controlled character is modified depending upon the speed of movement of the character, whereby the number of polygons is reduced at higher speed. At low level speeds, the character is drawn with a predetermined number of polygons and at higher level speeds the character is drawn with a reduced number of polygons, except that the polygons used for drawing the face remains the same as at the first level speed. In this fashion, the character is simulated in a manner designed to appear to be most realistic to the user, who is more likely to focus on the character face, rather than the body during animated character motion.

**7 Claims, 16 Drawing Sheets**